

Remarks

Applicant presents claims 6 to 16 and 18 to 20 for consideration.

Applicant cancels without prejudice claims 1 to 5 and 17, and reserves the right to subsequently file a continuation application utilizing the presently rejected claims.

Applicant has rewritten original claim 18, which was a multiple dependent claim, in independent form such that it incorporates the limitations of its base claims, and has revised the language used therein. Accordingly, amended claim 18 and new claims 19 and 20 are presented for consideration.

Applicant has not modified any of claims 6 to 16 in view of Examiner's indication that they are allowable.

Applicant has modified the specification to correct a typographical error contained therein.

35 USC § 103 Rejections

For the reasons that follow, Applicant respectfully disagrees with Examiner's rejection of original claim 18 as dependent on claims 1, 2, and 3 under 35 USC § 103 in view of Sumi et al. (US 6554490) in combination with Wood (US 5726506) and in view of Takahashi (US 6192435 B1) in combination with Wood.

Rejections Based on Sumi et al. in Combination with Wood

Original Claim 18 as Dependent on Claim 1

With respect to original claim 18 as dependent on claim 1, the Examiner states that it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate diodes 10, 23 on the supply lines, as taught by Wood, into the "supply lines 314" of Sumi et al. to prevent reverse current and

signals from interfering with the source. For the following reasons, Applicant respectfully disagrees.

Original claim 18 as dependent on claim 1 written in independent form is as follows:

A coaxial multiconductor plug and socket means arrangement, said plug means having a plurality of plug contacts thereon, adapted for insertion in said socket means, said socket means having a plurality of socket contacts disposed thereon, comprising:

- a) a first plug contact of said plug contacts electrically coupled to a first diode, and at least one other plug contact electrically coupled to plug isolation means;
- b) a first socket contact of said socket contacts electronically coupled to a second diode, and at least one other socket contact electronically coupled to socket isolation means;
- c) the plug isolation means activated only when the second diode is detected by the full engagement of the plug and socket so as to then permit electrical current to flow to and/or from said at least one other plug contact thereon; and
- d) the socket isolation means activated only when the first diode is detected by the full engagement of the plug and socket so as to then permit electrical current to flow to and/or from said at least one other socket contact thereon.

As a preliminary matter, Applicant notes that Sumi et al. does not teach the use of "supply lines 314". Sumi et al. teaches the use of signal terminal 314 or supply terminal 315. Regardless of which terminal 314, 315 is considered, however, Applicant respectfully disagrees with the Examiner's rejection.

The invention disclosed in Sumi et al. operates by first mechanically detecting the insertion of a plug 111 into a receptacle 101. When receptacle 101 is empty, terminal 301 is at a high logic level as a result of it being connected to a power

source through a pull-up resistor 305. Upon full insertion of the plug 111, movable contact 302 is depressed and terminal 301 is consequently connected to ground and changes to a low logic level. The standby circuit 324 then activates a control signal CSG after a prescribed period of time following the transition of the voltage level at terminal 301 from high to low, which control signal causes the switch circuit 328 to turn on, connecting signal line 325 with signal line 326. Signal terminal 314 and supply terminal 315 are connected to signal line 325 upon full insertion of the plug 111. See, for example, Sumi et al. at column 10, lines 27 to 37 and Figures 9A and 9B.

Sumi et al. does not teach nor suggest the use of diodes anywhere on the signal terminal 314 or supply terminal 315. Applicant therefore submits that a person skilled in the art has no incentive or motivation to combine the invention of Sumi et al. with the diodes taught in Wood, and therefore that a person skilled in the art would not combine Sumi et al. and Wood in the fashion suggested by the Examiner. Consequently, Applicant submits that the invention as claimed is unobvious in light of Sumi et al. and Wood.

Even if a person skilled in the art were to place diodes along the signal terminal 314 or supply terminal 315 as suggested by the Examiner, Applicant submits that the invention as claimed does not result. The claimed invention activates the plug isolation means only when the second diode *is detected by* the full engagement of the plug and socket; similarly, it activates the socket isolation means only when the first diode *is detected by* the full engagement of the plug and socket. Detection of the diodes is performed by sensor circuits 256, 257, for example. In contrast, placing diodes along the lines of, or between any two lines of, signal terminal 314 or supply terminal 315 does not result in the *detection* of the diodes resulting in the activation of the isolation means, the switch 328. Regardless of whether diodes are present, the detection of the insertion of the plug 111 by mechanical means, as described above, is what ultimately controls the switch 328.

Indeed, Applicant respectfully submits that if the Examiner's suggestion of incorporating diodes in the invention taught by Sumi et al. is followed, the functionality of the device would be negatively affected. Placing diodes between any two lines of the signal terminal 314 or supply terminal 315 could short the two lines together, for example. In the case of the supply terminal 315, this could result in shorting together power and ground lines. Furthermore, placing diodes along any two lines of the signal terminal 314 would limit the lines to being unidirectional and would introduce a voltage drop in the line. In this way, a person skilled in the art is taught away from combining Sumi et al. and Wood in the fashion the Examiner suggests.

Therefore, Applicant submits that the invention as claimed in original claim 18 as dependent on claim 1 is unobvious in light of Sumi et al. and Wood, and therefore that claim 18 as currently presented is unobvious in light of Sumi et al. and Wood.

Original Claim 18 as Dependent on Claim 2

The Examiner's objection to original claim 18 as dependent on claim 2 is substantially similar to his objection to original claim 18 as dependent on claim 1. Original claim 18 as dependent on claim 2 written in independent form is as follows:

A coaxial multiconductor plug and socket arrangement comprising:

- a) a pair of plug contacts, electrically coupled to each other via a diode;
- b) a pair of socket contacts, electrically coupled to electronic isolation means;
- c) the socket isolation means being activated only when current is detected in the diode upon full engagement of the plug and socket arrangement.

As with original claim 18 as dependent on claim 1, the socket isolation means are activated only when current *is detected in the diode* upon full engagement of the plug and socket arrangement. Consequently, for the same reasons as presented above with respect to original claim 18 as dependent on claim 1, Applicant submits that original claim 18 as dependent on claim 2 is unobvious in light of Sumi et al. and Wood, and therefore that claim 19 as currently presented is unobvious in light of Sumi et al. and Wood.

Original Claim 18 as Dependent on Claim 3

The Examiner's objection to original claim 18 as dependent on claim 3 is substantially similar to his objection to original claim 18 as dependent on claim 1. Original claim 18 as dependent on claim 3 written in independent form is as follows:

A coaxial multiconductor plug and socket arrangement comprising:

- a) a pair of socket contacts, electrically coupled to a diode;
- b) a pair of plug contacts, electrically attached to electronic isolation means;
- c) said isolation means activated only when current is detected in the diode upon full engagement of the plug and socket arrangement.

As with original claim 18 as dependent on claim 1, the isolation means are activated only when current *is detected in the diode* upon full engagement of the plug and socket arrangement. Consequently, for the same reasons as presented above with respect to original claim 18 as dependent on claim 1, Applicant submits that original claim 18 as dependent on claim 3 is unobvious in light of Sumi et al. and Wood, and therefore that claim 20 as currently presented is unobvious in light of Sumi et al. and Wood.

Rejections Based on Takahashi in Combination with Wood

Original Claim 18 as Dependent on Claim 1

With respect to original claim 18 as dependent on claim 1, the Examiner states that it would have been obvious to one of ordinary skill in the art at the time the claimed invention was made to incorporate the diodes 10, 23 as taught by Wood into the invention taught by Takahashi on the four plug and four socket lines shown in Figure 1 of Takahashi. The Examiner states that the motivation would have been to prevent a backflow of current from the load portion of the device to the power source. For the following reasons, Applicant respectfully disagrees.

Takahashi clearly identifies the problems that the invention disclosed therein is designed to address: that of the large transient current peak and derivative of the transient current (see column 3 at lines 37 and 51, and column 4 at lines 7 and 8). Takahashi does not identify as a problem a backflow of current from the load portion to the power source, nor does it suggest that such a backflow of current is a concern.

Furthermore, the use of diodes 10, 23 in Wood is in the "OR"ing together of multiple power supplies 6. There is no teaching nor suggestion of using diodes 10, 23 in a different type of application, such as in the present invention.

Therefore, Applicant submits that there is no motivation to combine the devices of Takahashi and Wood in the manner suggested by the Examiner. Consequently, Applicant submits that original claim 18 as dependent on claim 1 is unobvious in light of Takahashi and Wood, and therefore that claim 18 as currently presented is unobvious in light of Takahashi and Wood.

Furthermore, Applicant has deleted "coaxial" from claim 18 as currently presented and now specifies that "said plug and socket means share a common axis". Applicant respectfully submits that in light of this revision, even if Takahashi and Wood were combined as the Examiner suggests, the plug and socket contacts disclosed in Takahashi do not "share a common axis" and therefore would not render the invention as presently claimed obvious.

Original Claim 18 as Dependent on Claim 2

The Examiner's objection to original claim 18 as dependent on claim 2 is substantially similar to his objection to original claim 18 as dependent on claim 1. Consequently, for the same reasons as presented above with respect to original claim 18 as dependent on claim 1, Applicant submits that original claim 18 as dependent on claim 2 is unobvious in light of Takahashi and Wood, and therefore that claim 19 as currently presented is unobvious in light of Takahashi and Wood. Applicant further notes that as with claim 18 as currently presented, claim 19 as currently presented specifies that the plug and socket means "share a common axis" and therefore that even if Takahashi and Wood are combined as the Examiner suggests, the invention as presently claimed does not result and therefore is not rendered obvious.

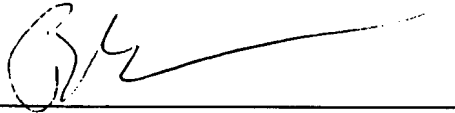
Original Claim 18 as Dependent on Claim 3

The Examiner's objection to original claim 18 as dependent on claim 3 is substantially similar to his objection to original claim 18 as dependent on claim 1. Consequently, for the same reasons as presented above with respect to original claim 18 as dependent on claim 1, Applicant submits that original claim 18 as dependent on claim 3 is unobvious in light of Takahashi and Wood, and therefore that claim 20 as currently presented is unobvious in light of Takahashi and Wood. Applicant further notes that as with claim 18 as currently presented, claim 20 as currently presented specifies that the plug and socket means "share a common axis" and therefore that even if Takahashi and Wood are combined as the Examiner suggests, the invention as presently claimed does not result and therefore is not rendered obvious.

In view of the above, Applicant submits that this application is now in condition for allowance, and a Notice thereof is respectfully requested. The Examiner is requested to contact the undersigned at the number listed below for a telephone interview if, upon consideration of this amendment, the Examiner determines any pending claims are not in condition for allowance.

The undersigned also requests the Examiner to direct all future correspondence to the address set forth below in the event the Examiner shows a different correspondence address for the attorney of record.

Respectfully submitted,

A handwritten signature in black ink, appearing to be 'B. Lee', written over a horizontal line.

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